

USSR

GOLDMAN, A. G.; PROSKURA, A. I.; KRICHEVETS, M.

"Electroluminescence and Stimulated Conductivity of ZnCdS Tablets"

Minsk, Zhurnal Prikladnoy Spektroskopii; August, 1972; pp 269-71

ABSTRACT: Baked polycrystalline tablets were used as convenient samples in the complex study of electroluminescence and stimulation of conductivity in ZnCdS. As an example, the authors studied the electroluminescence near the cathode and the stimulation of conductivity in photoconducting tablets with $Zn_{30}Cd_{70}S$ as a base at a temperature of 77°K. To obtain the tablets activated powder was first subjected to a pressure of 200 atmospheres and then sintered while being heated to 700°C. The electroluminescence spectra of ZnCdS, ZnCdS-Sn, and ZnCdS-Cu tablets consisted of bands with a maximum near 530 nm. Bands with maxima at 450, 490, and 580 nm respectively were observed in the photoconductivity spectra.

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GOLDMAN, A. G., et al., Zhurnal Prikladnoy Spektroskopii; August, 1972; pp 269-74

In the presence of an average field strength of $4 \cdot 10^4$ v/cm electroluminescence with a brightness up to 1 nit appeared simultaneously with an increase in conductivity. The luminescence disappeared at a temperature of about 190°C. The electroluminescent characteristics were typical for the so-called shock mechanism of luminescence excitation. It was assumed that with a reabsorption of the electroluminescent radiation the conductivity of the tablets in the stimulated state can increase still more by the application of photocurrent.

The article includes 4 figures. There are 8 references.

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- 65 -

USSR

UDC 577.1:547.95:612.8.015

BONDARENKO, T. I., KRICHENSKAYA, A. A., Department of Biochemistry of the Rostov-na-Donu University

"N-Acetyl- α - β -Aspartyl- β -Glutamate and N-Acetyl- β -Aspartic Acid in Different Compartments of a Rat's Brain in the Presence of Hyperoxia"

Kiev, Ukrains'kiy Biokhimichniy Zhurnal, Vol 44, No 4, 1972, pp 431-436

Abstract: The various compartments of the brain of white rats differ with respect to N-acetyl- α - β -aspartyl- β -glutamic (NAAG) and N-acetyl- α - β -aspartic acid (NAAA). With respect to the increase in dipeptide content it is possible to arrange them in the following order: the cerebral hemispheres > cerebellum > mesencephalon and diencephalon > medulla oblongata. The N-acetyl- β -aspartic acid content increases in the same sequence. When developing oxygen poisoning, the amount of dipeptide and NAAA in the investigated compartments of the brain decreases.

The experiments were performed on white rats weighing from 120 to 150 grams subjected to increased oxygen pressure in a pressure chamber at 3.25 atmospheres for 60 minutes. The carbon dioxide exhaled during respiration of the animals was captured by means of an alkaline absorber. The methods of ion exchange chromatography, paper chromatography and electrophoresis were used to 1/2

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BONDARENKO, T. I. and KRICHEVSKAYA, A. A., Ukrains'kiy Biokhimichniy Zhurnal, Vol 44, No 4, 1972, pp 434-436

determine the content of the designated compounds in the areas of the rats' brains under investigation. A decrease in the NAMA and NAAG contents took place in all areas after the animals were subjected to oxygen poisoning. The mechanism of this effect is discussed, and the specific significance of the inhibition of the enzyme system of the acid decarboxylation of pyruvic acid under pressure is noted.

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USSR

UDC 612.823.1.015.33:612.58

SHUGALEI, V. S., KRICHENSKAYA, A. A., and GERSHENOVICH, Z. S., Chair of Biochemistry, Rostov State University

"The Resistance of Hibernating Hamsters (*Cricetus auratus*) to the Effect of Increased Oxygen Pressure"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 6, No 5, Sep/- Oct 70, pp 523-526

Abstract: The effect of oxygen at a pressure of 5 atm on hibernating and nonhibernating hamsters was studied. The content of ammonia, urea, glutamine and gamma-aminobutyric, aspartic, and glutamic acids in the brain was determined. Winter hibernation was found to protect the animals against the toxic effects of oxygen under pressure; the animals were not aroused during 8 hours of hyperoxia. The concentration of low-molecular-weight nitrogen compounds in the brain did not differ from that found in animals hibernating under usual conditions. Urea may stabilize proteins, as is indicated by the increased urea content found in the brain tissue. This enhanced stability of brain protein may be the basis for the resistance of the entire organism of the hibernating animal to the effects of extreme conditions.

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1/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--SINTERED NICKEL OXIDE-NICKEL ELECTRODES FOR ALKALINE BATTERIES

AUTHOR--(02)-POZIN, YU.M., AKCHEVSKAYA, A.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,207

REFERENCE--OTKRYTIYA, IZGORET., PRIM. OBRATSY, TSVARIVYE ZNAKI 47 (10)

DATE PUBLISHED--09MAR70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., ENERGY CONVERSION
(NON-PROPULSIVE)

TOPIC TAGS--NICKEL OXIDE, BATTERY ELECTRODE, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1464

STEP NO--UR/0482/70/0007000700007/0000

CIRC ACCESSION NO--AA0126995

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0126995

ABSTRACT/EXTRACT--(U) GP-D- ABSTRACT. THIS ELECTRODE WITH ENGRAVED FREQ.
CHARACTERISTICS IS PREP. BY SUCCESSIVELY SATG. THE POROUS CASS. IN A 51
SALT SOLN., IN ALKALI, AND IN A Cd SALT SOLN. TUP THE Cd SALT SOLN.
30-80 G Ni-L. IS ADDED BY INITIALLY STORING THE SOLN. OVER A NiO HYDRATE
FOR 2-10 HR.

UNCLASSIFIED

USSR

UDC 661.668:621.9-492:541.12.01

BELOZERSKIY, N. A., KRICHENSKAYA, O. D., PIGROVA, G. D., BELOZERSKIY, G. N.,
SEGAL', L. D.

"Phase Composition of Carbonyl Iron-Nickel Powders"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug, 1972, pp 8-13.

Abstract: Studies were performed using powders produced by thermal decomposition of a mixture of liquid nickel and iron carbonyls sprayed into the heated space of the decomposition apparatus through a water-cooled sprayer. A thermodynamic evaluation is given for the secondary reactions which are the source of the carbon and oxygen in the carbonyl powder. It is thermodynamically possible for carbon to be present in iron-nickel powders as free carbon (black) or as Fe_3C cementite; nickel carbide may also be formed.

Oxygen can be bonded as wustite, magnetite and nickel oxide. Iron-nickel carbonyl powders with 20, 50 and 80% nickel are studied for content of carbon and oxygen and the phase state of the impurities is determined. Chemical phase analysis shows that in carbonyl iron-nickel powders, carbon is present to a significant extent in the form of the carbide. Oxygen is bonded in the form of Fe_3O_4 . The content of carbide carbon in iron-nickel powders is de-

termined as a function of composition. It is shown that upon transition from a powder with 20% nickel to 80% nickel, the content of carbide carbon de-

USSR

UDC 661.668:621.9-492:541.12.01

BELOZERSKIY, N. A., KRICHESKAYA, O. D., PIGROVA, G. D., BELOZERSKIY, G. N.,
SEGAL', L. D., Kiev, Poroshkovaya Metallurgiya, No 8, Aug, 1972, pp 8-13.

creases from 1.20 to 0.86%. It is shown that the content of carbide carbon in an iron-nickel powder of a given composition is relatively stable. Fluctuations in the quantity of total carbon in powder of the same composition as a function of technological parameters of thermal decomposition occur due to changes in the content of carbon black.

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1/2 025 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--CARBONYLS OF COBALT, NICKEL, OR GROUP VI AND VII METALS -U-

AUTHOR--(C2)-DELUZERSKIY, N.R., KRICHENSKAYA, O.O.

COUNTRY OF INFO--USSR

SOURCE--GER. OFFEN. 1,860,300

DATE PUBLISHED--02JUL70

K

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBONYL COMPOUND, CHEMICAL SYNTHESIS, CHEMICAL PATENT, METAL CARBONYL, COBALT CARBONYL, NICKEL COMPOUND, MOLYBDENUM, TUNGSTEN, CARBON MONOXIDE, NUCLEATION, RHENIUM, VANADIUM, MANGANESE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1432

STEP NO--GY/0000/10/000/000/0000/0100

CIRC ACCESSION NO--A0013442

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AA0133442
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THESE CARBONYLS WERE PREPD. IN
48-93PERCENT YIELD BY CARBONYLATION OF THE METALS, E.G. H, CO, NI,
RE, MN, OR V, OR THEIR SALTS AT 30-200DEGREES AND 30-280 ATM IN
CIRCULATING CO, OPTIONALLY IN THE PRESENCE OF FE AND (OR) NI. THE
GASEOUS PRODUCTS WERE SPRAYED WITH LIQ. FE CARBONYL AND (OR) NI CARBONYL
FOR CRYSTAL NUCLEATION IN A COLLECTING CONDENSER AND THE CARBONYL YIELD
WAS GREATER THAN OR EQUAL TO 90PERCENT. FACILITY: GIPRONIKEL
STATE PLANNING AND SCIENTIFIC RESEARCH INSTITUTE OF THE NICKEL INDUSTRY.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DETERMINATION OF THE SOLUBILITY OF MOLYBDENUM CARBONYL IN CARBON
MONOXIDE AT HIGH PRESSURE -U-
AUTHOR--(04)-KRICHINSKAYA, N.D., KREMNEV, V.L., ZELIKHMAN, L.A., BULOTSOVA,
K.N.
COUNTRY OF INFO--LSSR *K*
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 877-9
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLYBDENUM COMPOUND, METAL CARBONYL, SOLUBILITY, CARBON
MONOXIDE, HIGH PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0439

STEP NO--UR/0080/20/043/004/0877/0679

CIRC ACCESSION NO--AP0126192

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126192
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. WAS DETER. AT 100-280
ATM. AND 0-3CDEGREES. THE CONTENT OF MO(CO) SUB6 IN COMPRESSED CO ROSE
WITH INCREASE IN PRESSURE. AN EXPRESSION IS GIVEN FOR THE SOLY. OF
MO(CO) SUB6 IN CO AS A FUNCTION OF THE CO PRESSURE.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE—DYEING CELLULOSE FIBERS WITH FIBER REACTIVE DYES. ANALYSIS OF
KINETIC EQUATIONS -U-
AUTHOR—(03)—SADOV, F.I., KRICHESKIY, G.YE., MOVSHOVICH, I.M.

COUNTRY OF INFO—USSR

SOURCE—Izv. VYSSH. UCHEB. ZAVED., TEKHNOL. TEKST. PROM. 1970, (1), 74-80

DATE PUBLISHED—70

SUBJECT AREAS—MATERIALS

TOPIC TAGS—KINETIC EQUATION, DYE, CELLULOSE RESIN, DIFFUSION COEFFICIENT

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

STEP NO--UR/0324/T0/000/001/0076/0080

PROXY REEL/FRAME—2000/0946

CIRC ACCESSION NO—AP0124606

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30 OCT 70

CIRC ACCESSION NO--AP0124606

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. THE KINETICS OF DYEING CELULOSE FIBERS WITH FIBER REACTIVE DYES DEPEND ON THE EFFECTIVE DYE PENETRATION DEPTH (L); L EQUALS (D OVER K) PRIME0.5 (D IS THE DYE DIFFUSION COEFF. IN THE FIBER AND K IS THE RATE CONST. OF THE DYE FIBER REACTION). THE VALUES OF L DET. THE KINETIC REGION OF DYEING (TIME DEPENDENT, DIFFUSION RATE CONTROLLED, OR TRANSITIONAL).
FACILITY: MUSK. TEKST. INST., MOSCOW, USSR.

UNCLASSIFIED

K
AM0033529

Simulin, N.A.; Mel'nikov, Ye.Ya.; Furman, M.S.; Kharchevskiy, I.R.;
Samarin, B.R.; Alekseyev, A.M.; Tveretskiy, S.A.; Areystrov, Ya.A.
(editorial board)

Handbook for the Nitrogen Worker. Vol. 2 (agrotechnika.zzzchika.com
Khiniya. 445 sp. (SL#652))

TABLE OF CONTENTS:

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II	The Production of Nitric Fertilizers	117
III	Materials and basic special Equipment	251
IV	Power Supply	369
V	Safety Technique	415
	Subject Index	431

19710038

AM00335.9

In the second volume of the handbook are examined the physico-chemical bases of the processes and industrial projects for the production of nitric acid and nitric fertilizers. The handbook is designed for technical engineers in the nitric and other branches of chemical industry; each chapter has a bibliography, in all 294 references

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19710039
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KRICHENSKIY, I. Ya.

automation

See: Types 55742
[? RER T]

TDC 319-93-62-30

GENERALIZATIONS OF THE THEORY OF ERROR ACCUMULATION

[Article by M. M. KLEIN^{A. A.} and I. Ya. KRICHENSKIY^{A. V.}, Institute of Problems of Control Automation and Telemechanics, Academy of Sciences of the USSR, Vol. 202, No. 1, 1972, signed to press 17 May 1971, pp. 56-61.]

The theory of accumulation in linear automatic control systems under the influence of an extremal perturbation $\dot{f}(t)$, limited in absolute value by $|f(t)| \leq \delta$, was developed in the research of S. V. Emel'yanov [1], V. G. Romanov [2] and others [3-5]. Modern research of N. G. Chetverov [6], A. I. Lur'e [6] and others [5-11]. Modern theory of error accumulation has as its purpose the determination of conditions for accumulating errors and the evaluation of maximal dynamic error of the system for a finite segment of time $[0, T]$ under the perturbing effects $f(t)$, limited in absolute values along with its first two derivatives, and the relationship of this problem to the theory of optimal processes.

The content of the present article is devoted to this problem.

In the mathematical sense this problem may be reduced to seeking the quantity

$$\max_{0 \leq t \leq T} |f(t)| = \max_{0 \leq t \leq T} \int_0^t K(T-t, T)f(u)du \quad (1)$$

in class M of the controls $f(t)$, which satisfy the conditions

$$|f'(t)| \leq m_1, \quad f'(t) - f''(t) \leq m_2, \quad (t \in [0, T]). \quad (2)$$

Here $K(T-t, T)$ is the impulse transition function of the perturbation having a finite number of points of switching (t_1, t_2, \dots, t_{n-1}), the position of which does not depend on T . Below we shall assume $K(T-t, T) > 0$ in even intervals of $[t_i, t_{i+1}]$ ($i = 0, 1, n-1$).

The problem of the maximal value of the linear functional $I(f)$ ($f \in M$) at a fixed moment of time T was studied in [7, 8], where a basic theorem was obtained as to the form of the optimal control, and several arguments were examined which

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UDC 621.377.799+5.1.382.2 (088.6)

KRICHEVSKII, M.E., ARITSE, N.H.

"Method Of Measurement Of The Effective Lifetime Of Minority Charge Carriers In P-N Junction Of Semiconductor Device"

USSR Author's Certificate No 20412, filed 30 July 66, published 11 July 71
(from RZh:Elektronika iyeve prizmeniye, No 2, Feb 72, abstract No 23/77P)

Translation: With the object of increasing the precision of measurement, a current of sinusoidal form is fed to the junction, the frequency of which successively changes up to attainment of the maximum value of the charge, and later with respect to the value of the frequency obtained the effective lifetime of the charge carriers is determined as a reciprocal to this frequency.

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USSR

UDO 621.314.632.4

ARTSIS, N.KH., KRICHESKII, M.E.

"Effect Of Frequency Of Sinusoidal Voltage On Operation Of Rectifier Diode"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, Issue 3(53), pp 85-92 (from RZh-Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B119)

Translation: A mathematical expression for the loss of the forward half-period is composed on the basis of a continuity equation for a one-dimensional model of a semiconductor diode with an abrupt planar n-p junction. A solution with respect to the parameter ωT (ω = angular frequency; T = effective lifetime of holes) was obtained on a computer. It is established that the power released during the forward half-period at the p-n junction practically does not depend on the frequency of the feed voltage, and the power released in the base of the semiconductor diode is increased in the frequency range from $0.1 \leq \omega T \leq 10$. An expression for the reverse current after passage of the forward current of sinusoidal form is formulated and solved. The phase duration of the high conductivity as a function of ωT and the ratio of the base thickness and the diffusion length of the minority carriers W/L was determined on a computer. It is derived that the amplitude of the reverse currents grows with an increase of ωT

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USSR

ARTSIS, N. Kh., KRICHESKII, M. E., Elektron. tekhnika. Nauchno-tekhn. sb.
Poluprovodn. pribory, 1970, Issue 3(55), pp 85-92 (from Zh.-Elektronika i vye
primeneniye, No 1, January 1971, Abstract No 18119)

up to 10 and with an increase of the base thickness up to $W/L = 3$. The magnitude of the amplitude of the reverse current with the given conditions can serve for an evaluation of the parameters of the semiconductor diode (W and C).
5 ill. 6 ref. A. S.

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Acc. Nr:

AP0040005Abstracting Service:
CHEMICAL ABST.Ref. Code:
K Y-70 MRD191

79966n Studying the life of a metal-polymer pair in sliding friction bearings. Krichanskii, M. E.; Le'chuk, L. M.; Sel'vitsina, D. S. (USSR). Plast. Massy 1970, (1), 69-70 (Russia). The working parameters were studied of steel shaft-bearing systems. Bearings were made of solid cast nylon 6 (II) or steel coated with I by spraying or by dipping into hot fluidized I. The changes of bearing temp. (t) and frictional moment with time, the loss of I by attrition, and the changes of the friction coeff. with the workability criterium $\eta(t)vS/H(t)RL$, [$\eta(t)$] is the dynamic viscosity, v is the linear shaft velocity, S is the sepn. between the shaft and the bearing, $H(t)$ is the hardness-temp. function of the bearing's surface, R is the shaft radius, and L is the bearing length (L. M. Le'chuk, et al., 1968)] are shown in graphs. The loss of I by attrition occurs rapidly when the workability criterium $< 5 \times 10^{-14}$

CF/R

J=3

REEL/FRAME

USSR

UDC: 621.372.82

KRICHEVSKIY, V. N.

"Propagation of an H_{01} -Wave in a Flat Waveguide With Two Semi-Infinite Steps of Identical Thickness and Ideal Conductivity"

Radiotekhnika. Resp. mezhved. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 13, pp 107-112 (from RZh-Radiotekhnika, No 5, May 71, Abstract № 5291)

Translation: The author determines the field which is scattered when an H_{01} wave impinges on two semi-infinite steps of identical thickness and ideal conductivity in a flat waveguide. The formulation of the problem and its solution are analogous to problems of diffraction of an H_{01} -wave by an isolated step and a half-plane of finite thickness in a flat waveguide.

Resumé.

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USSR

UDC: 621.372.82

KRICHEVSKIY, V. N.

"Propagation of an H_{01} -Wave in a Flat Waveguide With a Half-Plane of Finite Thickness and Ideal Conductivity"

Radiotekhnika. Resp. mezhev. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 13, pp 97-106 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5B87)

Translation: The Wiener-Hopf method is used to solve the problem of finding the field scattered when an H_{01} -wave is incident on a half-plane of finite thickness with ideal conductivity in a flat waveguide. The solution consists of two parts, one of which is expressed in terms of known functions; the second part of the solution is a function of unknown constants which satisfy an infinite system of equations. In the case where the thickness of the strip to the height of the waveguide is low, the part of the solution which is exactly known is the dominant part, and therefore all the unknown constants may be put in with a high degree of precision except for the first few, which are equal to zero. In the case where the ratio of strip thickness to waveguide height is close to unity, the infinite system is solved by the method of iterations. Resumé.

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USSR

K UDC 669.293:669.774.21 3

PAVLOV, I. M., RYHOV, V. A., SAUTIN, Yu. I., IZOTOV, V. M., KRIGREVSKIY, Ye. N.,
YEL'CHANIKOV, V. N., and NEVTSOV, A. S.

"Some Problems in the Manufacture of Welded Pipes"

Moscow, Tsvetnyye Metally, No 3, Mar 70, pp 50-52

Abstract: The cost of seamless pipe from niobium and its alloys is high due to the low percentage of pipe fit for service (10--15%). The present study describes a more economical production technology for thin-walled pipe from a shell. Niobium ingots alloyed with titanium and zirconium were used as the starting material. The mechanical properties of the plates and the electron-beam welding parameters are given in tabular form. The mechanical test data show that arc-preliminary vacuum annealing of the parent metal slightly reduces the strength properties (by 12--15%) and considerably increases elongation per unit length (1.5 to twofold). The strength properties of the welds are somewhat lower than those of the parent material whereas elongation per unit length remains at the same level. Metallographic analysis revealed coarse-grained dendritic structure (for the weld area) with dark inclusions. The microhardness is the same in both the weld and parent metal and ranges from 270 to 330 kg/mm². The microhardness of electron-beam welds is about the same as that of argon-arc welds. Prior to

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PAVLOV, I. M., Tsvetnyye Metally, No 3, Mar 70, pp 50-52

rolling the billets were annealed at 1200°C. For 11.6-mm and 12-mm pipes the total deformation was 40 to 60%; for 20 mm pipes -- 33%. The pipes passed flattening tests to the point of wall contiguity. The new technology of the process makes it possible to reduce by 2 to 2.5 times the cost of the finished product, with the physicomechanical properties remaining the same.

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USSR

UDC 539.4

TAVER, Ye. I., RYSKIN, A. N., KOPYLOV, A. K., SUDOV, N. G., KRASHEVSKIY,
Ye. Yu., SUNIOTIN, A. M., ANTROPOV, N. P., ANTONOVSKAYA, E. I., Leningrad

"Strength of Welded Joints in High-Strength Stainless Steels at Cryogenic
Temperatures"

Kiev, Problemy Prochnosti, No 6, 1972, pp 93-96.

Abstract: The influence of the geometry of welded seam made by austenitic
wire on the strength of welded joints of martensitic stainless steels at
cryogenic temperatures is studied. The influence of technological defects
(such as under- and overheating) on strength of welded joints of two types
of steels at low temperatures is studied. It is established that designers
must consider both reduced strength of seam metal under normal conditions
and impermissibility of any stress concentrators in the seam zone.

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USSR

UDC: 621.791:621.472

AFANAS'YEV, I. V., SIDOROV, N. G., KRICHESKII, YE. YU., and FILIMONOV, V. I.

"Use of Solar Ray Energy for the Welding of Materials"

Kiev, Avtomaticheskaya svarka, Sept 71, no 9, pp 67-68

Abstract: Experiments involving the use of solar radiation heating units for welding aluminum, steel, and titanium indicate the following: radiant energy is capable of bringing up various materials to the point of melting and welding; effective results are facilitated by mirrors shaped to optical precision; the ultimate thickness of the metal being welded is determined by its thermophysical properties; increasing the absorption coefficient of solar rays by the weldpool will reduce radiant energy losses in welding; the bead width is determined by the focal spot diameter: the smaller the diameter, the deeper the penetration. Figures in the original article give an over-all view of a solar high-temperature furnace with an inclined optical concentrator axis, a schematic of the URAN-1 solar radiation heating unit, and finally a schematic drawing of a solar radiation welding unit incorporating a concentrator for parallel solar rays to the focal point.

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USSR

AFANAS'YEV, I. V., et al, Avtomaticheskaya svarka, Sept 71, no 9, pp 67-68

It is suggested that a source of this type built from tantalum carbide may be heated in outer space vacuum up to 3500°K. Arrangements for convenient transportation and reducing the weight of the system are discussed. The long-range potentialities of solar radiation welding are stressed.

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- 53 -

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXPERIENCE IN CONSERVATIVE THERAPY OF NONSPECIFIC ULCEROUS COLITIS

-U-

AUTHOR--KRICHEVSKIY, YU.A.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 6, PP 99-102

DATE PUBLISHED----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--COLON, DIGESTIVE SYSTEM DISEASE, DIET, BLOOD TRANSFUSION,
VITAMIN, HORMONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1780

STEP NO--UR/0497/10/048/006/0099/0102

CIRC ACCESSION NO--APO129148

UNCLASSIFIED

Z/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129148
ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. COMPLEX CONSERVATIVE TREATMENT WAS INSTITUTED IN 101 PATIENTS SUFFERING FROM DIFFERENT FORMS OF NONSPECIFIC ULCEROS COLITIS. APART FROM THE USUAL AGENTS (DEET, BLOOD TRANSFUSION, VITAMINS, GLYCOCORTICOIDS) THE PATIENTS WERE GIVEN ANABOLIC STEROIDS HORMONES (METHYLANDROSTENDIOL, NEROBOL), PYROGENAL, CURATIVE ENEMAS WITH POLYMEROL. THE REFERRED TO AGENTS INCLUDED INTO THE TREATMENT AUGMENTED THE EFFECTIVENESS FROM 64.3PERCENT TO 89-90PERCENT OF CASES.
FACILITY: INFECTSIONNAYA KLINICHESKAYA BOL'NITSA NO 22, KHAR'KOV.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--LIQUID VAPOR EQUILIBRIUM IN SYSTEMS FORMED BY ALIPHATIC AMINES,
ALKCHCLS. AND WATER. V. CORRELATION OF DATA ON THE LIQUID VAPOR
AUTHOR-(02)-KOMAROV, V.M., KRICHETSOV, B.K.

CCOUNTRY OF INFO--USSR

SOURCE--ZF. PRIKL. KHIR. (LENINGRAD) 1970, 63(5), 1160-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, ALIPHATIC AMINE, ENTHALPY, AZOTROPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1978

STEP NO--UR/0080/70/043/005/1160/1163

CIRC ACCESSION NO--AP0132239

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--APO132239

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THIS STUDY OF LIQ. VAPOR EQUIL. IN ALIPHATIC AMINE AND WATER SYSTEMS MADE IT POSSIBLE TO DET. THE DEPENDENCE OF THE EXCESS FREE ENTHALPY OF MIXING FUNCTION ON THE TAFT CONSTS., AND ALSO TO DET. THE DEPENDENCE OF THE B.P. AND THE COMPN. OF THE AMINE AND WATER AZEOTROPE ON THE B.P. OF THE PURE AMINE. FOR AMINES WITH B.P.S. IS GREATER THAN 200DEGREES, B.P. OF THE AZEOTROPE VARIES IN THE LIMITS OF 99.7-100DEGREES. THE AMINE CONTENT IN THE AZEOTROPE IN WT. PERCENT DEPENDS ON THE B.P. OF THE PURE COMPONENT.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--23 OCT 70
TITLE--LIQUID VAPOR EQUILIBRIUMS IN SYSTEMS FORMED BY ALIPHATIC AMINES,
ALCOHOLS, AND WATER. II. LIQUID VAPOR EQUILIBRIUMS IN SYSTEMS FORMED BY
AUTHOR--(02)-KRICHETSOV, B.K., KOMAROV, V.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(1), 112-15

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, ALIPHATIC AMINE, PROPANOL, AZEOTROPE, VAPOR
PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1254

STEP NO--UR/0080/70/043/001/0112/0115

CIRC ACCESSION NO--A00116716

UNCLASSIFIED

2/2 015

.UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--APO116716

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LIQ. VAPOR EQUIL. WERE STUDIED IN THE SYSTEMS PROPYLAMINE, $H_{SUB2}O$ (A), DIPropylamine, $H_{SUB2}O$ (B), PROPYLAMINE,1,PROPANOL (C), AND DIPropYLAMINE,1,PROPANOL (D). THE COMPNS. OF THE PHASES IN EQUIL. AND ACTIVITY COEFFS. CALCD. THEREFROM ARE TABULATED. DEVIATIONS FROM IDEALITY ARE SMALL AND POS. FOR A, LARGE AND POS. FOR B, AND LARGE AND NEG. FOR C. CONSTS. FOR THE REDLICH KISTER EQUATION ARE GIVEN FOR A, C, AND D. SYSTEM B FORMS A HETEROAZEOTROPE WITH A NORMAL B.P. AT 85.85DEGREES. EQUATIONS ARE GIVEN FOR THE TEMP. DEPENDENCE OF THE VAPOR PRESSURE OF THIS AZEOTROPE AND OF PURE PROPYLAMINE AND DIPropYLAMINE.

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104075

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LIQ. VAPOR EQUIL. IN THE SYSTEMS ISOPROPYLAMINE (I), DIISOPROPYLAMINE (II), H SUB2 O AND ISO,PROH,II,H SUB2 O WERE STUDIED AT 760 MM HG AND 43 TO 81DEGREES. BOTH SYSTEMS SHOW REMARKABLE REGIONS OF LIMITED SOLV. THE FORMER REMAINS HOMOGENEOUS OVER THE WHOLE CONCN. RANGE FOR I CONTENT GREATER THAN 15 WT. PERCENT. THE B.P. OF THE LATTER INCREASES WITH INCREASING AMT. OF ISO,PROH. A GOOD CONSISTENCY CHECK OF THE DATA WAS FOUND BY USING ACTIVITY OR ACTIVITY COEFF. CALCNS. THE CONSTS. OF THE EMPIRICAL REOLICH AND KISTER EQUATIONS DESCRIBING THE TITLE SYSTEMS BEHAVIOR WITH 5PERCENT ACCURACY ARE GIVEN.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--LIQUID VAPOR EQUILIBRIUMS IN SYSTEMS FORMED BY ALIPHATIC AMINES,
ALCOHOLS, AND WATER. IV. CORRELATION BETWEEN THE THERMODYNAMIC
AUTHOR--(02)-KRICHETSOV, B.K., KOMAROV, V.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 703-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, ALIPHATIC AMINE, BUTANOL, THERMODYNAMIC
CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1177

STEP NO--UR/0060/70/043/003/0703/0706

CIRC ACCESSION NO--AP0128599

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125599

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LIQ. VAPOR EQUIL. WERE OBTD. FOR THE SYSTEMS ET(BU)NH₂OH AND ET SUB2 NH₂OH AND A METHOD OF CORRELATING THE DATA FOR AMINE ALCOHOL SYSTEMS BASED ON THE PROPERTIES OF THE PURE COMPONENTS WAS PROPOSED. TABULATED ARE THE S.P., N PRIME20 SUB0, AND D PRIME20 FOR THE PURE COMPONENTS, AND THE S.P., CONCNS, OF COMPONENTS IN THE LIQ. AND VAPOR PHASE, AND ACTIVITY COEFFS. FOR THE ABOVE MENTIONED BINARY SYSTEMS. ALSO, THE EXCESS FREE ENERGY VALUES WERE CORRELATED WITH THE COMPN. OF THE AMINE ALCOHOL MIXTS. IN SYSTEMS OF ALIPHATIC AMINES AND ALCOHOLS TESTED AND WITH THE TAKI STERIC SUBSTITUTENT CONSTS. E SUBS. FOR ALIPHATIC AMINE ALCOHOL SYSTEMS, THE EXTENT OF DEVIATIONS FROM IDEAL BEHAVIOR IS A FUNCTION OF STERIC EFFECTS. THESE DEVIATIONS CAN BE CALCD. BY USING E SUBS. FACILITY: GOS. INST. PRIKL. KHM., LENINGRAD, USSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--16 OCT 70
TITLE--DYNAMICS OF GAS EVOLUTION AND OF GAS CONTAMINATION WITH DUST IN 100
TON OXYGEN CONVERTERS -U-
AUTHOR-(05)--KRICHETSOV, E.A., SHIRINKIN, N.A., REKHTER, V.YA.,
KUKURUZNYAK, I.S., KITTAYEV, A.T.
COUNTRY OF INFO--USSR

R

SOURCE--STAL' 1970, 30(2), 113-18

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL OXYGEN CONVERSION, EXHAUST GAS DYNAMICS, STEEL
MANUFACTURE PROCESS, METALLURGIC FURNACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0203

STEP NO--UR/0133/70/030/002/0113/0118

CIRC ACCESSION NO--AP0115907

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--16 OCT 70

CIRC ACCESSION NO--AP0115907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF 100 TON CONVERTER HEATS SHOWED A MARKED NONUNIFORMITY OF GAS AND DUST EVOLUTION RATES. THE REASONS FOR THIS ARE DISCUSSED. THE RATE OF OPERATIONS IS DEFINED BY THE CAPACITY OF THE GAS REMOVING INSTALLATION, WHICH MUST BE DESIGNED FOR THE MAX. GAS EVOLUTION. FACILITY: KRIVOROZH. MET. ZAVOD, KRIVOI ROG, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SOME INDICES OF ACTIVITY OF THE RHEUMATIC PROCESS -U-

AUTHOR--KRICHIN, YA.D.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 30-34

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RHEUMATIC DISEASE, SYNDROME, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PRUXY REEL/FRAME--3001/1599

STEP NO--UR/0475/70/000/004/0030/0034

CIRC ACCESSION NO--APO127090

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30 OCT 70

CIRC ACCESSION NG--APO127099

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE PRESENTED OF A STUDY OF THE DIAGNOSTIC VALUE OF CERTAIN INDICES OF THE RHEUMATIC PROCESS AND NON SPECIFIC IMMUNOLOGICAL REACTIVITY IN 716 PATIENTS WITH VARIOUS PHASES AND VARIANTS OF CLINICAL COURSE OF RHEUMATISM. A COMPLEX OF CLINICAL, INSTRUMENTAL, BIOCHEMICAL AND IMMUNOLOGICAL METHODS HAVE BEEN USED. FOR DIFFERENTIAL DIAGNOSIS CLINICO LABORATORY SYNDROMES PECULIAR OF CERTAIN PHASES AND VARIANTS OF THE CLINICAL COURSE ARE RECOMMENDED.

FACILITY: CHERNOVITSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 662.7

KRIGHKO, A. A., and YULIN, M. K.

"Obtaining Fuels and Chemical Products from Mixtures of Coal and Oil"

Moscow, Khimiya Tverdogo Topliva, No 6, 1973, pp 75-80

Abstract: A theoretical scheme has been developed for obtaining commercial products from distillates with a boiling point to 320 degrees from the liquid-phase hydrogenation product of a mixture of coal and oil. The scheme includes the isolation of C₆-C₈ phenols from the fraction with a boiling point to 240 degrees, hydrofining distillates with a boiling point to 320 degrees, reforming gasolines and hydrocracking of distillates with a boiling point of 180-320 degrees. When refining the hydrogenation product it is possible to obtain the following compounds: 3.4% phenole, 81.2% gasoline, 13.9% hydrocarbon gases C₁-C₄, 0.5 percent ammonia, 0.5 percent hydrogen sulfide and 1.0% water. Data are tabulated characterizing the hydrogenation product from a 1:1 mixture of coal and oil, the results of hydrofining distillate with a boiling point to 320 degrees, the characteristics of the raw material and recycle for hydrocracking, the results of catalytic reforming of hydrofined 1/2

USSR

KRICHKO, A. A., and YULIN, M. K., Khimiya Tverdogo Topliva, No 6, 1973,
pp 75-80

gasoline, the results of hydrocracking the fraction with a boiling point of
180-320 degrees, and the characteristics of hydrocracked gasolines.

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1/2 - 011

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--MODEL OF A VISCOS ELECTROLYTE FOR THE ELECTRO POLISHING OF COPPER
-U-

AUTHOR--AFENDIK, K.F., KRICHMAR, S.I.

K

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(1), 132-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTE, COPPER, ELECTROLYTIC METAL POLISHING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0318

STEP NO--UR/0364/70/005/001/0132/1133

CIRC ACCESSION NO--AP0103973

UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0103973

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SATISFACTORY RESULTS WERE OBTAINED WITH AN ELECTROLYTE MADE OF HNO₃ SUB3 (1.341) 25 AND GLYCEROL (1.225) 75PERCENT. THE POLARIZATION CURVE IN THIS ELECTROLYTE WAS VERY SIMILAR TO THAT IN H₂ SUB3 PO₂ SUB4. THE RELATION BETWEEN THE LOG OF THE RATIO OF THE VISCOSITY OF THE ELECTROLYTE WITH CU TO THE VISCOSITY OF THE PURE ELECTROLYTE AND THE LOG OF THE RATIO OF THE LIMITING CURRENT IN PURE ELECTROLYTE WITH CU TO THE CU CONTENT IN SOLN. CONFIRMS THE ASSUMPTION ABOUT THE COMPENSATING EFFECT OF LOWERING THE DIFFUSION COEFF. BY CONCN. ON THE GROWTH OF ITS GRADIENT NEAR THE ELECTRODE SURFACE.

UNCLASSIFIED

USSR

UDC: 621.315.592

KRAVCHENKO, A. F., KRICHER, E. D., MOROZOV, B. V., POLOVINIKIN, V. G. and SKOK,
E. M., Institute of Semiconductor Physics, Siberian Department, Acad. Sci. USSR,
Novosibirsk
"Nernst-Ettingshausen Effects in n-GaAs in the Phonon Drag Region"
Leningrad, Fizika i tekhnika poluprovodnikov, vol 6, No 6, 1972,
pp 1150-1151

Abstract: This paper is based on an earlier article written by some of the authors named above and published in the same journal (5, 1971, p 1608) reporting observation of the phonon drag effect of the thermo-emf in n-type GaAs. The present brief communication presents curves of the Nernst-Ettingshausen effects, longitudinal and transverse, as functions of temperature. The measurements made for plotting the curves were conducted in weak magnetic fields. A sharp rise in the effects below 200° K is noticeable in the curves; this is attributable to the drag effect. In the mathematical analysis, an expression is derived for the contribution of the phonon drag to the coefficient of the transverse I-S effect. The authors, associated with the Novosibirsk Institute of Semiconductor Physics, conclude that the relaxation time of long-wave phonons is independent of the wave vector and that the electrons are dragged by the acoustic phonons through the deformation potential.

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USSR

UDC 539.3

KRIGER, V.F.

"Stability of Isotropic Cylindrical Shell With Longitudinal Hinges
Subject to Uniform External Pressure"

Moscow, Prochnost' i Ustoichivost' Tonkostennykh Aviatsionnykh
Konstruktsiy, 1971, pp 273-282.

Abstract: The paper analyzes a cylindrical shell of finite length with simply supported ends, provided with one or several longitudinal hinges. The shell is subject to a uniform external pressure.

Nondimensional cylindrical coordinates are used.

The condition of stability is given by the differential equations (2).

The general solution (7) contains eight arbitrary constants, which can be determined from the boundary conditions.

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USSR

KRIGER, V. F., Prochnost' i Ustoichivost' Tonkostenniykh Aviationsionnykh Konstruktsiy, 1971, pp 273-282

Figures 4, 5 and 6 present the solution for the cases of one, two and three hinges respectively. The figures show the influence coefficient of the hinge versus the ratio of the circumference to the length.

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- 100 -

Acc. Nr.: M0040450Ref. Code: UR 0482

USSR

UDC 621.375.4.523.8
TPRS 40248

VALAYEV, N. I., KRIGER, YE. G. and OGINSKIY, A. A.

"Transistorized Amplifier for a Tracking System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 51. Author Certificate No 258389.

Abstract: An author certificate has been granted for a transistorized amplifier for a tracking system. The amplifier is made in the form of a preliminary amplifier sumnator and a two half-period amplifier-demodulator with a negative output current feedback. To simplify and to increase reliability, it contains a current transformer in the feedback circuit, two windings of the transformer are connected in series with the demodulator transistors, while the third winding (step-up) is connected to the preliminary amplifier input.

Reel/Frame
19741942

USSR

UDC 621.375.4.523.8

VALAYEV, N. I., KRIGER, YE. G. and OGINSKIY, A. A.

"Transistorized Amplifier for a Tracking System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 51. Author Certificate No 258389.

Abstract: An author certificate has been granted for a transistorized amplifier for a tracking system. The amplifier is made in the form of a preliminary amplifier sumuator and a two half-period amplifier-demodulator with a negative output current feedback. To simplify and to increase reliability, it contains a current transformer in the feedback circuit, two windings of the transformer are connected in series with the demodulator transistors, while the third winding (step-up) is connected to the preliminary amplifier input.

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1/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--BURNING OF NATURAL GAS IN A FLUIDIZED BED FURNACE FOR CALCINING
ALUMINA -U-
AUTHOR-(02)-KRIGMAN, L.YE., BASKAKOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--GAZOV. PROM. 1970, 15(1), 29-31

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PROPULSION AND FUELS

TOPIC TAGS--NATURAL GAS, FLUIDIZED BED, INDUSTRIAL FURNACE, FUEL
CONSUMPTION, ALUMINA

CONTROLE MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FILE/FRAME--1979/1911

STEP NO--UR/0492/79/015/001/0029/0031

CIRC ACCHSSION NO--AP0048198

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0048198

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGE FROM INDIVIDUAL FLARE BURNERS TO FLUIDIZED BED COMBUSTION IS CONSIDERED WITH RESPECT TO THE BURNER SYSTEM AND AREA OF THE CALCINING CHAMBER. THREE CASES OF BURNER SYSTEMS WERE EXAMINED: (I) FEED OF PREMIXED GAS AIR INTO THE BURNER OR BED, (II) INDIVIDUAL FEEDING OF GAS THROUGH NOZZLES INTO THE CHAMBER PROPER, AND OF AIR INTO THE HEARTH, AND (III) FEED OF BOTH GAS AND AIR THROUGH THE HEARTH, MIXING OF BOTH IN THE BED ITSELF. CASE (III) WAS MOST ADVANTAGEOUS. THE OPTIMUM CALCINING TEMP. WAS FOUND TO BE 1000DEGREES AND THE RELATIVE FUEL CONSUMPTION WAS AT ITS LOWEST (111 KG-TON OF ALUMINA), COMPARED WITH 142-70 KG-TON IN INDIVIDUAL BURNERS.

UNCLASSIFIED

USSR

UDC 546.641'161+546.664'161+645.665'161+546.666'161+546.668'161

STRIZHKOV, B. V., RUCHKIN, YE. D., KRIKOROV, V. S., PONOMARENKO, V. A., NIKITENKO, L. S., and KHROMOV, A. D.

"Production of Anhydrous Fluorides of the Yttrium Subgroup of Rare-Earth Elements"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, No 8, 1972, pp 1428-1433

Abstract: The anhydrous REM fluorides are a promising material for the manufacture of thin-film condensors by vacuum sputtering. One method of manufacturing anhydrous REM fluorides is by thermal decomposition of the hydrated fluorides of these elements. One shortcoming of this method is that dehydration upon heating may be accompanied by pyrohydrolysis. The method has not been fully studied. The present work studies the process of production of anhydrous fluorides of Y, Dy, Ho, Er, and Yb by thermal decomposition of their hydrates in air, in a current of a dry inert gas and in a vacuum. The methods of thermal, crystallooptical, x-ray structural, and chemical analyses plus IR spectroscopy were used to study the specimens. The dehydration of the fluorides was found to be a multistage process. Complete removal of the water of crystallization requires heating to 500-600°C (somewhat lower in a vacuum), apparently a result of the deep penetration of water molecules into the defective crystalline lattice of the fluorides. Initial

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USSR

Strizhkov, B. V., Ruchkin, Ye. D., Krikorov, V. S., Pchelkin, V. A., Nikitenko, L. S., Khromov, A. D., Moscow, Neorganicheskiye Materialy, No 8, 1972, pp 1428-1433.

dehydration removes all but approximately 0.5 mol of the water rather easily, after which dehydration is more difficult and apparently is accompanied by ordering of the crystalline structure of the substance. The temperature of complete dehydration can be reached only in a vacuum or in a current of a dry inert gas; otherwise, the process of pyrohydrolysis begins before the dehydration reaction is completed.

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USSR

UDC 621.395.6--161.5

KRIKOROV, V.S., KRASCV, V.G., MARYANYANTS, A. YE.

"Preparation And Study Of The Quality Of Thin-Film Capacitors Based On Oxides Of Rare-Earth Elements"

Elektron. tekhnika. Nauch.-tekhn. sb. Upr. kachestva i standartiz. (Electronics Technology. Scientific-Technical Collection. Administration Of Quality And Standardization), 1971, Issue 1(7), pp 79-83 (from RZh--Radiotekhnika, No 9, Sept 1971, Abstract No 9V316)

Translation: The preparation is considered of thin dielectric films and capacitors based on oxides of rare-earth elements by the method of thermal evaporation with electron bombardment and by an electron beam in a vacuum. The results are presented of a study of the quality of the thin-film capacitors prepared. Summary.

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USSR

UDC 541.138-185.621.315.592

KRIKSTORAVTIS, I. B., and KUDZHMAUSKAYTE, ZH. P., Order of the Red Banner of Labor Institute of Semiconductor Physics, Academy of Sciences Lithuanian SSR

"Appearance of Nonequilibrium Current Carriers in Interaction of Ge Single Crystal With Au³⁺ Ions in HF Solution"

Vil'nyus, Trudy Akademii Nauk Litovskoy SSR, Seriya B -- Khimiya, Tekhnika, Fizicheskaya Geografiya, Vol 2. 1971, pp 21-26

Abstract: The purpose of the article is to confirm the hypothesis that electrons from the valence band of Ge may be involved in the reduction of Au³⁺ ions on the single crystal, with the holes generated being injected into Ge. In other words, to detect the generation of nonequilibrium carriers in the interface bands during the reduction of Au³⁺ ions and the oxidation of surface Ge atoms. A specially prepared electrochemical cell was used for the experiments. The results indicate that in the contact exchange between Au and Ge ions in HF solutions there is reduction of the noble metal by electrons from the valence band of Ge. The diffusion of the nonequilibrium current carriers generated at the surface in the crystal is determined by measuring the kinetics of the electrode potential. Thus, the reduction of Au³⁺ ions on the surface of a Ge single crystal can be included among processes connected with the generation of electron-hole pairs. 1/1

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USSR

UDC 541.13:315.592

KRIKSHTOPAYTIS, I. B., KUDZHMAUSKAYTE, ZH. P., Institute of Semiconductor
Physics of the Lithuanian SSR Academy of Sciences, Vil'nyus

"Interaction of Monocrystalline Germanium with Trivalent Gold Ions in Concentrated Solutions of HF"

Moscow, Elektrokhimiya, Vol VII, No 10, pp 1579-1581

Abstract: A study was made of the interaction of monocrystalline germanium with trivalent gold ions in concentrated solutions of hydrofluoric acid. An experiment was performed to discover the proposed generation of nonequilibrium carriers in the interphase zone during reduction of the trivalent gold ions and oxidation of the surface atoms of the germanium. The preparation of the electrochemical cell for this experiment is described. The reduction of the trivalent gold ions on monocrystalline germanium, just as solution or illumination of it, has a clearly expressed effect on the bias of the stationary potential and determines the dependence of the variation of the electrode potential on the volumetric concentration of the carriers in it. The occurrence of minor carriers by diffusion on the measured surface generated by the three above-mentioned processes of excitation of the opposite

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USSR

KRIKSHTOPAYTIS, I. B., et al, Elektrokhimiya, Vol VII, No 10, pp 1579-1581

side of the thin monocrystalline sample makes the corresponding contribution to the potential jump at the phase interface expressed in the electrode potential bias. The appearance of the maximum effect of the electrode potential bias in the n-type region with minimum volumetric concentration of the minor carriers indicates that the reduction of the gold ions in the given concentrated solution takes place primarily by transport of charges through the valence zone of the electrode.

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USSR

UDC 541.13:621.315.592

KRIKSHTOPYTIS, I. P., and KUDZHMAUSKAYTE, ZH. P., Labor Red Banner Order Institute of the Physics of Semiconductors, Academy of Sciences Lithuanian SSR

"Isolation of Au on Ge Monocrystals in Hydrofluoric Acid Solutions"

Vilnius, Trudy Akademii Nauk Litovskoy SSR, Seriya B, Vol 3(62),
1970, pp 13-19

Abstract: A study is reported on the heterogeneous system Ge/HF-H₂O-HAuCl₄ at high concentrations of dissolved Au, concentrating on the interaction of Au³⁺ ions with a deformed, thin surface layer of Ge monocrystal in concentrated HF solutions. The quantity of the deposited Au and dissolved Ge was determined by a weight method. It has been determined that the surface structure of the deposited Au depends on the HF:H₂O ratio in the solution. As the Au continues to be deposited on the monocrystal, the equivalent character of the contact exchange is shifted. The basic components of the solution and the changes taking place during this heterogeneous

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USSR

KRIKSHTOVAYTIS, I. B., et al., Trudy Akademii Nauk Litovskoy SSR, Seriya B, Vol 3(62), 1970, pp 13-19

reaction lead to an excessive amount of the reduced Au. It is proposed that this phenomenon is due to the generation of holes in the interface due to the reduction of Au, some of which are trapped by the surface layers.

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DOC: 621.317.7.57

USSR

KRIKSUNOV, V. G. and TETEL'BAUM, A. S.

"Errors in Spectrum Analyzers Realizing the Fast Fourier Transform Algorithm"

Kiev, Izvestiya VUZ - Radioelektronika, vol. 14, No. 5, 1971,
pp 566-571

Abstract: An estimation of the interference distortion arising in the determination of the amplitude and initial phase of spectrum components by the method of discrete techniques is made, and recommendations are made on the choice of discretization step or the number of signal readings. The authors begin their computation with the direct discrete Fourier transform for determining the signal discretization complex spectrum, and find the maximum error in the initial phase. They also consider the interference errors for spectra whose envelopes are described by exponential, hyperbolic, and bell-shaped functions, assuming there is no preliminary filtration. Finally, they analyze the situation in which a filter with a frequency characteristic approximated by the Taylor series is connected to the analyzer input.

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- 84 -

AA0039845

KRIKUN, V. Ya. UR 0482 8

Soviet Inventions Illustrated, Section I Chemical, Derwent,-

3/70

237722 BIOCHEMICAL TESTING OF WASTE WATER. Is more reliable and more accurate. Vessel 1 is connected to the compensating bottles 2 and 3 through an electrolyser 4 and a pressure regulator 5. The regulator is connected with a level indicator 6, an amplifier 7, a relay 8 and a recorder 9. 1 litre of waste water (sample) with active sludge is placed in the vessel. A container 10 with 30% solution of KOH is placed to absorb carbon dioxide. Oxidising of organic matters accompanies the demand for diluted oxygen and subsequent diffusion of it from gas 11 to a liquid. The pressure of gas increases due to the fact that

AUTHORS: Arendt, G. A.; Veprintsev, V. I.; Kalvagin, A. M.;
Krikun, V. Ya.; Livshits, L. S.; Marchenko, I. A.;
Morgulis, L. A. and Sokolov, G. I.

19741229

AA0039845

electrolyser 4 produces oxygen by the electrolysis of an anode A. When it is equal to the pressure in the bottles 2 and 3, the electrolyser is automatically cut-off. The current to the electrolyser is regulated by a resistance R and the duration of the cycle is controlled by a timer 12. Hydrogen from cathode R is absorbed in 13. Mixing of sample is done magnetically 14 and the complete assembly is submerged in a thermostatically controlled water bath 15. 17.4.67. as 1149716/23-26. A.A KUZMIN et alia Water Supply Canalisation Hydrotechnical Plate and Hydrogeological Eng. Res. Inst. (7.7 69.) Bul.8/12.2.69. Class 85b. Int.Cl. C02b.

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Spetsial'noye Konstruktorskoye Byuro "Gazstroymashina"

19741230

USSR

UDC 621.382.002

ROGOV, YU.P., PREOBRAZHENSKIY, A.I., KRIKUNENKO, N.K., ZUZHNILOV, A.G.

"Some Distinctive Features Of The Construction Of Multiposition Mechanical Systems Of Inspection-Classification Complexes"

Elektron. tekhnika. Nauchno-tekhn. sb. Upr.kachestvom i standartiz. (Electronic Technology. Scientific-Technical Collection. Quality Control And Standardization), 1970, Issue 2, pp 94-108 (from RZh-Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 43413)

Translation: On the basis of an analysis of the technology for inspection of semiconductor devices, recommendations are given on the use of single- and multiposition inspection-classification equipment. The distinctive features are considered of the construction of multiposition mechanical systems of an automatic inspection-classification complex. The possibility and the advantages of the aggregation principle of construction of mechanical systems on the basis of a single structural scheme are shown. Recommendations are given on the choice of devices for a particular purpose. 6 ref. Summary.

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- 72 -

USSR

UDC 619:616.981.42+616.982.2:616.44

BOZHKO, G. K., Candidate of Veterinary Sciences, Main Veterinary Administration, Ministry of Agriculture UkrSSR, and KRIKUNOV, A. A., Voronezhskaya Oblast Veterinary Department

"Experience in Controlling Brucellosis and Tuberculosis"

Moscow, Veterinariya, No 10, 1971, pp 53-59

Abstract: During the first few years after World War II brucellosis was reported in all the oblasts and every other farm in the Ukraine. Today the republic is on the way to being completely brucellosis-free, with plans calling for total eradication of the disease in 1972. This situation was brought about by persistent use of one or more of the following methods: (a) systematic search for and slaughter of diseased animals; (b) prophylactic vaccination of young animals; (c) replacement of young animals with other from healthy farms; and (d) replacement of the entire diseased herd with healthy animals from disease-free farms. Brucellosis was rampant in Voronezhskaya Oblast in the late 1940's but reduced to isolated cases by 1971, mainly by vaccination. Tuberculosis was brought under control in the oblast by widespread use of the tuberculin test and destroying all the diseased animals detected.

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- 88 -

USSR

UDC 615.616.24-003.656.6

DINKELIS, S. S., KRIKUNOV, G. N., KIRILYUS, Z. YE., KONDRAKOVA,
M. YA., NYAKISHEV, I. A., TOLYANSKAYA, L. A.

"Significance of the Petrographic Composition and Degree of Oxida-
tion of Coal Dust When Evaluating It In Anthracosis Danger"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk
Medical Institute), 1972, vyp 110, pp 39-40 (from RZh--Farmakolo-
giya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Nar
73, Abstract No 3.54.889)

Translation: Three specimens of coal dust of defined petrographic
composition and state of oxidation comprising 98-99 percent organic
material and not containing SiO₂ were obtained experimentally.
After intratracheal administration of these coal dust samples to
rats, by the results of the histomorphologic and biochemical
studies it was established that the rats developed pulmonary fibro-
sis. Among the trace components of the coal dust, the more
expressed fibrogenic reaction was obtained for fusinite. The bio-
logical effects caused by the unoxidized coal dust (by comparison
with oxidized) appeared more quickly and were most expressed dur-
ing the first ten days after poisoning.

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USSR

UDC 621.785.784:621.88.085

BOCHAROVA, T. T. and KRIMER, B. I., Moscow Institute of Steel and Alloys

"Effect of Extended Aging on the Structure and Strength of Alloy AMg6-Ni-
POS40 Braze Joints"

Moscow, Metallovedeniye, No 3, 1973, pp 62-64

Abstract: The effect of extended (up to 2500 hours) action of increased temperatures of 50, 100, and 150°C on the structure, phase composition, and shear strength was investigated for braze joints made using AMg6 alloy coated with a 20-40 micron layer of electrolytic nickel. Prior to brazing, the coated blanks measuring 50 x 20 x 3 mm were annealed in argon at 325°C for one hour to improve the bonding of the coating. Brazing was done using LM-1 flux at 280°C for POS40 braze alloy and at 230°C for POS61. The process of aging braze alloys in the braze joints is completed after 100 hours at 50-150°C. The strength of the braze joints, tested at room temperature, was lowered by 20-30% as a result of aging the braze alloys. The strength of the aged joints, tested at -196°C, with increased aging time at 50-150°C, is gradually lowered

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USSR

BOCHAROVA, T. T. and KRIMER, B. I., Metallovedeniye, No 3, 1973, pp 62-64

20-25% after soaking for 2500 hours, which is caused by the increase in the width of the Ni₃Sn₄ layer. The indicated changes in structure and strength do not impair the operational capability of AMg6-Ni-PbS40(PCS61) brace joints at room, cryogenic, and elevated temperatures. 3 figures, 1 table, 1 bibliographic reference.

2/2

USSR

KRIMER, M. Z., SHANSHURIN, A. A., and LAVRINENKO, YE. S.

"Synthetic Method for Geranylacetone"

USSR Author's Certificate No 352876, filed 30 Nov 70, published 30 Oct 72
(from RZh-Khimiya, No 19, Oct 73, Abstract No 19N514P)

Translation: A synthetic method has been proposed for geranylacetone (6,7-trans isomer of 2,6-dimethyl- Δ 2,6-undecadienone-10) (I), used in the synthesis of terpenoids and biologically active compounds such as juvenile hormones. Example. To 50 g linalool 19.5 g of 40% HBr is added at a temperature ranging from -5 to 10° at a rate keeping the temperature at the specified range. The mixture is kept for 1 hr at the temperature ranging from -5 to 10°. CHCl₃ is removed, the extract is rapidly washed with a saturated solution of NaHCO₃ and water, dried yielding 62 g of the crude product which is then added at 2-5° to a solution of sodium acetoacetate (from 4.7 g Na and 30 g acetoacetate in 70 ml MeOH). The mixture is stirred for 2 hrs at 2-5° and 2 hrs at 60-65° with concurrent evaporation of the solvent under a weak vacuum. 110 ml of a 10% NaOH solution is added to the residue, stirred for 2 hrs at 60-65°, cooled, acidified with conc. HCl, C₆H₆ is evaporated, the extract is washed with a saturated solution of NaHCO₃. Water, dried and evaporated yielding 19.5 g I, b. p. 102-4/5°, n_D^{20} 1.4670, containing 8-10% of the nerylacetone (cis isomer). 1/1

- 60 -

1/2 014

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--DEHYDROCHLORINATION OF ALPHA PARACHLORAL -U-

AUTHOR--(02)-SHAMSHURIN, A.A., KRIMER, M.Z.

COUNTRY OF INFO--USSR

SOURCE--ZH. VSES. KHM. OBRASHEST. 1970, 15(2), 237

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HETEROCYCLIC OXYGEN COMPOUND, TRIOXANE, CALCIATED ORGANIC
COMPOUND, CHEMICAL SYNTHESIS, MOLECULAR STRUCTURE, INSECTICIDE, NMR
SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1577

STEP NO--UR/0063/70/015/002/0237/0237

CIRC ACCESSION NO--A00129947

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0128967

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING PARACHLORAL WITH PYRIDINE UNTIL DISSOLVED RESULTED IN A CLEAR SOLN., WHICH BECAME TURBID IN A FEW MINUTES, THEN RAPIDLY UNDERWENT AN EXOTHERM, AFTER WHICH IT WAS RAPIDLY POURED ON ICE TO YIELD 69PERCENT
2,4,BIS(TRICHLOROMETHYL),6,DICHLOROMETHYLTRILOXANE (I), M. 80-10DEGREES,
SUBLIMABLE IN VACUO. ITS NMR SPECTRUM WAS SHOWN. BASES SUCH AS KOH OR
K SUB2 CO SUB3 OR ETONA WERE NOT EFFECTIVE IN THIS REACTION. THE
PRODUCT WAS A FEEBLE INSECTICIDE AGAINST WEEVILS AND FLIES.
FACILITY: INST. KHM., KISHINEV, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--131077
TITLE--SELECTION OF VARISTORS BASED ON SILICON CARBIDE FOR MULTIPLIER

SQUARES -U-

AUTHOR--KRIMER, S.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, PRIBORY I SISTEMY UPRAVLENIYA, NO 12, 1970, PP 49-50

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--VARISTOR, SILICON CARBIDE, ELECTRON MULTIPLIER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1518

STEP NO--UR/0449/70/0007002/0049/0050

CIRC ACCESSION NO--AP0131873

UNCLASSIFIED

2/2 .023 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0131873
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PROPOSED FOR DETERMINING THE NONLINEARITY FACTORS OF VARISTORS FOR THE SQUAKER CIRCUIT UNDER STUDY. THE EXPERIMENTAL METHOD WAS USED FOR ESTABLISHING THE INTERRELATIONSHIP BETWEEN THE NONLINEARITY FACTOR OF A VARISTOR AND ITS NOMINAL CURRENT ALONG WITH THE DETERMINING ERROR OF SQUARING. RECOMMENDATIONS FOR SELECTING VARISTORS FOR MULTIPLIERS ARE GIVEN.

UNCLASSIFIED

Acc. Nr.: AP0042553Ref. Code: LIR0203JPRS SD162Determining Coefficients of Reaction Rates

(Abstract: "Possibility of Determining the Coefficients of Reaction Rates from Ionospheric Data," by I. A. Kripberg, B. N. Velichaginskiy, N. N. Klimov and Yu. F. Solov'yev, Siberian Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation; Moscow, Geomagnetism i Aeronomiya, Vol X, No 1, 1970, pp 84-89)

One of the methods for determining the coefficients of rates of reactions transpiring in the ionosphere is the processing of curves of the diurnal variation of electron concentration $n(t)$. In earlier studies it was shown that as many as six coefficients could be determined. However, there are many other secondary reactions which have not yet been taken into account. In this paper an effort is made to clarify the degree of reliability of the values of the coefficients of reaction rates determined using the $n(t)$ curve and what is the maximum possible number of coefficients which can be determined. The analysis shows that as a result of the quasistationary nature of the process of appearance and neutralization of charges and the presence of fluctuations of electron concentration by using the curve of the diurnal variation of electron concentration $n_e(t)$ at altitudes of 100-200 km it is possible to determine only some algebraic

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combinations A_{ij} of the coefficients of the reaction rates c_{ij} and γ_j .
However, for determining the coefficients c_{ij} and γ_j themselves it is
necessary to use additional relations.

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USSR

KRINBERG, N. A., METAFONOV, G. K.

"Estimating the Influence of Inertia and Viscosity on the Motion of an Electron-Ion Gas Along the Magnetic Field of the Earth in the Stationary Approximation"

X Vses. Konf. po Rasprostr. Radiovoln. Tezisy Dokl. Sekt. 8 [Tenth All-Union Conference on Propagation of Radiowaves, Theses of Reports, Section 8 -- Collection of Works], Moscow, Nauka Press, 1972, pp 84-89, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 B230).

Translation: The equations of motion of an electron-ion gas along a force line of the magnetic field of the earth can be written as

$$\begin{aligned} \frac{\partial V}{\partial t} + V \frac{\partial V}{\partial s} &= - \frac{1}{Mn} \frac{\partial}{\partial s} (n(T_e + T_i)) - \\ &- \frac{4}{3} \frac{1}{Mn} \frac{\partial}{\partial s} \left(n \frac{\partial V}{\partial s} \right) + g_1 - \frac{e}{M} NV \quad (1) \end{aligned}$$

where n is the concentration of electrons, equal to the total concentration of all types of ions, V is the velocity of motion of the electron-ion gas
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USSR

KRINBERG, N. A., METAFONOV, G. K., X Vses. Konf. po Rasprostr. Radiovoln. Tezisy Dokl. Sekts. 8, Moscow, Nauka Press, 1972, pp 84-89.

along the magnetic field, T_e and T_i are the temperatures of electrons and ions (in units of energy), M is the mean mass of an ion, N is the concentration of neutral particles, ϵ is the coefficient of friction, g_s is the projection of the acceleration of the force of gravity in the direction of the magnetic field, η is the coefficient of ion viscosity. The change in the relative role of individual terms of equation (1) with altitude is estimated by the authors, assuming approximately $\partial/\partial t \approx 1/r$, $\partial/\partial s \approx 1/\lambda$ (where t is the characteristic time of the process, λ is the characteristic scale of change of plasma parameters along the line of force) and using tabular data on values of the main parameters of the plasma at the base ($h = 3 \cdot 10^2$ km) and top ($h = 10^4$ km) of the force tube.

2/2

126. USSR KRINCHIK, YE. P.

NC

NC KRINCHIK, Ye. P., and MEDNIKAROV, P. D., Psychology Faculty, Moscow State University

"On the Mechanisms by Which Signal Probability Affects Human Reaction Time"

Moscow, Voprosy Psichologii, Vol 6, Nov-Dec 70, pp 34-46

Abstract: Two series of experiments were set up to test the hypothesis that signal probability affects reaction time via two mechanisms: the "physiological," in which the frequency and repetition of a signal conditions the sensorimotor apparatus to a rapid response, and the "psychological," in which the reaction time is affected by the subjective expectation of a stimulus. In one series of experiments the subject's attention was focused on one of two possible stimuli by associating a punishment with a slow reaction to that stimulus, while a slow reaction to the other stimulus received no punishment; in this experiment the stimuli were delivered in a random sequence, both with and without warning. In the second experiment there was no preferential reward or punishment, but the subjects were presented with two types of series, one in which the sequence was random and one in which the stimuli were presented in regular succession; in this experiment the ratio of occurrences between the two stimuli was varied.

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Sp: Foreign Press Digest
[unclear]

USSR

UDC 547.241.07

3

KABACHNIK, M. I., MEDVED', T. Ya., LASTOVSKIY, R. P., KOLPAKOVA, I. D.,
URINOVICH, Ye. M., KRINTSKAYA, L. V., and MIRONOVA, Ye. I.

"A Method of Making Hydroxyethylidenediphosphonic Acid"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obrantsy, tevarnyye znaki,
No 5, Feb 71, Author's Certificate No 292984, Division C, filed 2 Jun 69,
published 15 Jan 71, p 101

Translation: This Author's Certificate introduces: 1. A method of making hydroxyethylidenediphosphonic acid by interacting phosphorus trichloride with acetic acid in the presence of heat. As a distinguishing feature of the patent, the process is simplified by adding acetic anhydride to the initial mixture. 2. A modification of this method distinguished by the fact that the phosphorus trichloride, acetic acid and acetic anhydride are present in the mixture in a molar ratio of 1:2:1. 3. A modification of this method in which the process is carried out at a temperature of 35-120°C.

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17

USSR

UDC [661.7:547.297.2]+661.716.1

KOLPAKOVA, I. O., KABACHNIK, M. I., MEDVED', T. YA., LASTOWSKIY, R. P.,
KRINITSKAYA, L. V., URINOVICH, YE. M., and SMIRNOVA, V. A.

"Simultaneous Production of Acetyl Chloride and Hydroxyethylenediphosphonic Acid"

Moscow, Khimicheskaya Promyshlennost', No 8, 1972, pp 576-578

Abstract: Results are reported of the study of optimal reaction conditions for the simultaneous production of acetyl chloride and hydroxyethylenediphosphonic acid (HEDPA). The yield of HEDPA reached 84% when phosphorus trichloride was reacted with a mixture of acetic acid and acetic anhydride. The structure of HEDPA was proven by parallel synthesis from acetyl phosphonic acid diethyl ester and diethyl phosphite. Further proof was obtained by infrared spectroscopic analysis and potentiometric titration.

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USSR

UDC: 8.74

KRINITSKIY, N. A.

"Concerning Some Formal Languages"

V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Technology and Programming--collection of works), vyp. 7, Moscow, "Sov. radio", 1972, pp 5-13 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V614)

Translation: The author introduces a definition of languages as sets of words generated by inductive grammars. A relation is established between deductive and inductive generating grammars, as well as between grammars given in Backus form and the two above-mentioned grammars. An attempt is made to formalize the concept of semantics. Author's abstract.

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USSR

UDC: 51:330.115

KRINITSKIY, N. A., MIRONOV, G. A., FROLOV, G. D.

"Formal Definition of a Certain Class of Complex Systems"

V sb. Nauch. i prakt. probl. bol'sikh sistem. Sekts. Bol'shiye sistemy. Teoriya, metodol., modelir. (Scientific and Practical Problems of Large Systems--collection of works. Large Systems Section. Theory, Methodology, Modeling), Moscow, "Nauka", 1971, pp 163-167 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V860)

Translation: The paper gives a formal definition of some complex systems in the class of potentially algorithmizable systems. The fundamental problem of study is formulated for this class of systems, and a way to solve it is pointed out. Authors' abstract.

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USSR

UDC 621.396.66.018.4.001.5

KRINITSKIY, R. L., MURAKHIN, A. A.

"Comparative Analysis of Some Pulse Systems With Phase AFC by the Method of z-Transformations"

Moscow, Radiotekhnika i Elektronika, vol 16, No 12, Dec 71, pp 2254-2263

Abstract: The authors define the stability conditions, effective band and the optimum relations for the parameters of smoothing circuits which minimize the band in systems with first and second order astaticism and with a proportionally integrating filter. Formulas are given which define the effective band at the minimum. The limits at which discrete properties appear are defined more precisely. Formulas are derived for determining the dynamic errors. The basic properties of these pulse-type phase AFC systems are analyzed on the assumption that the phase detector has a triangular response, and that the smoothing circuits satisfy the conditions of an infinite degree of stability. The analytical investigation is supplemented by experimental data. Seven figures, bibliography of five titles.

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60

USSR

K
UDC : 621.37.434(088.8)

MALYUTIN, N. I., KRINITSKIY, R. L., MURASHIN, A. A.

"A Balancing Clamper"

USSR Author's Certificate No 253127, Filed 30 Jan 67, Published 22 Mar 70, in "Radio i Svyazi", RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10168 P)

Translation: This Author's Certificate introduces a clamper with an integrating capacitor which stores the peak voltages of brief bipolar pulses. To reduce the time constant of the charge and attenuate shunting of the pulse channel, the integrating capacitor is connected to the centertap of the secondary winding of the transformer (the primary winding is connected to the synchronization input). . . .

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USSR

UDC: 621.398.694.3:533.652

ABRAMOV, V. M., BARSKIY, B. R., VERTUSHKIN, B. A., GOL'DVIN, V. V.,
ZORIN, V. M., KRINKIN, A. A.

"A Pneumatic Computer"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztay, tovarnyye znaki,
No 8, Mar 71, Author's Certificate No 296091, division G, filed 17 Oct 68,
published 12 Feb 71, p 148

Translation: This Author's Certificate introduces a pneumatic computer which contains a single-diaphragm element with two nozzles which are coaxial with each other in the flow chamber of the element. The dead-end chamber of the element is connected to a multiplicand pressure source, and the inner nozzle is connected through a choke to a multiplier pressure source and directly to the output channel of the device, the annular channel formed by the nozzles being open to the atmosphere. As a distinguishing feature of the patent, the functional possibilities of the computer are extended by connecting the flow chamber of the element through a choke to a divisor pressure source.

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USSR

KRINOV, S. N., TSEMEL', G. I.

"Recognition of Unvoiced Plosives at the Ends of Words"

VI Vses. Seminar "Avtomat. Raspornavaniye Slukhovykh Obrazov (ARSO VI) Dokl. i Soobshch. [Sixth All-Union Seminar on "Automatic Recognition of Auditory Patterns (ARSO VI), Reports -- Collection of Works], Tallin, 1972, pp 111-114 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V851 by the authors).

Translation: A study was performed using a device for separation of segmented characteristics, connected to a Minsk-22 computer. The characteristics of plosives used are: presence of closure and the parameters of the noise segment -- number of zero intersections of the signal and number of intervals between intersections of over 0.2 msec duration. The reliability of recognition of terminal p, t and k was 92%, based on material of 288 words spoken by 16 persons.

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USSR

UDC 8.74

KRINOV, S. N., TSEMEL', G. I.

"Recognizing Final Voiceless Plosives"

Tallin, VI Vses. seminar "Avtomat. raspoznavaniye slushkovykh obrazov (ARSO VI)". Dokl. i soobshch.--sbornik (Sixth All-Union Seminar on Automatic Recognition of Audible Patterns. (ARSO VI). Papers and Reports--Collection of works), 1972, pp 111-114 (from RZh-Matematika, No 1, Jan 73, abstract No 1V851 by the authors)

Translation: The research was done by utilizing a device for isolating segmental features connected to a "Minsk-22" digital computer. The following were used as plosive features: the presence of a stop (occlusion) and parameters of the breath (sound) segment -- the number of zero intersections of the signal and the number of intervals between intersections with a duration of more than 0.2 ms. The reliability of recognition of final [unaspirated] p, t, and k was 92% based on material of 288 pronunciations by 16 speakers.

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1/2 409 UNCLASSIFIED PROCESSING DATE 7-20-01
TITLE--NEW BINDER FOR GUNITE TYPE CONCRETING -U-

AUTHOR--(05)-BAKLANOV, G.M., KAZAKEVICH, E.V., PONOMARENKO, O.I., LADYGIN,
F.F., KRIPILSER, A.M.
COUNTRY OF INFO--USSR

SOURCE--STROIT. MATER. 1970, (3), 26-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CEMENT, BLAST FURNACE SLAG, GYPSUM, CONSTRUCTION MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1650

STEP NO--UR/0228/70/000/003/0025/0027

CIRC ACCESSION NO--AP0112644
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30 OCT 70

GRC ACCESSION NO--AP0112644

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FAST SETTING AND FAST HARDENING CEMENT WAS DEVELOPED FOR GUNITE TYPE CONCRETING, SO CALLED SPUTTER CEMENT. IT CONSISTED OF CLINKER WITH DEGREE OF CAO SATN. EQUALS 0.83-0.87 OCNTG. 3CAO.AL SUB2 O SUB3 4.5-B, 3CAO.SIO SUB2 47-55PERCENT. SYNTHETIC SLAG WITH 70PERCENT 12CAO.7AL SUB2 O SUB3, GRANULATED BLAST FURNACE SLAG AND GYPSUM. THE BLAST FURNACE SLAG REDUCED THE COST AND INCREASED ITS RESISTANCE IN CORROSIVE MEDIA. AT A WATER-CEMENT RATIO OF 0.4 A SETTING DURATION OF 1-10 MIN WAS OBSD. IN THE 1ST 2 HR A STRENGTH OF 20 KG-CM PRIME2 HAS ATTAINED, AFTER 28 DAYS A COMPRESSIVE STRENGTH OF 250-374 KG-CM PRIME2. IN SUBTERRANEAN CONSTRUCTIONS IN ORE MINES THE SPUTTER CEMENT MET ALL THE REQUIREMENTS. IT NEEDS NO SETTING ACCELERATORS, AND THE NO. OF SERVICE PERSONNEL FOR THE PREPN. AND ADDN. OF ADDITIVES CAN BE REDUCED. A CONCRETE COATING DF 20-25 CM CAN BE APPLIED IN 1 STAGE. THE METHOD CAN BE USED NOT ONLY IN MINES, TUNNELS, SUBWAYS BUT OWING TO ITS CHEAPNESS ALSO IN CONSTRUCTION WORK.

UNCLASSIFIED

Acc. Nr.

A70048613 Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code
UR 0441

[Handwritten mark]

— 104935m Crystal structure of LiCu₃Sn. Kripyakevich, P. I.; Oleksiv, G. I. (Lviv. Derg. Univ., Lvov, USSR). Dopov. Akad. Nauk Ukr. RSR, Ser. A 1970, 1, 63-5 (Ukraine). The x-ray diffraction study of Li-Cu-Sn alloys prep'd. by sintering a mixt. of pure Li, Cu, and Sn in an alumina crucible under fluxes of LiCl and LiF revealed the formation of the ternary compd. LiCu₃Sn with ReB₁₂ type superstructure belonging to the space group $P\bar{6}_3/mmc(D_{\bar{6}h})$ with $a = 4.303$, and $c = 7.837 \text{ \AA}$. The compd. belongs to the series of compds. MnCu₃Al, LiCu₃Al, LiCu₃Si, and LiCu₃Ge with changing type of packing. GPJW J

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REEL/FRAME
19800340

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1/2 028 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CRYSTAL STRUCTURE OF THE X PHASE OF A MANGANESE COBALT SILICON
SYSTEM -U-
AUTHOR-(03)-YARMOLYUK, YA.P., KRIPYAKEVICH, P.I., GLADYSHEVSKIY, YE.I.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 268-74 *K*

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--MANGANESE ALLOY, COBALT ALLOY, SILICON ALLOY, CRYSTAL
STRUCTURE, ZINC ALLOY, ALUMINUM ALLOY, ZIRCONIUM ALLOY, INTERMETALLIC
COMPOUND, METAL SINGLE CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0910

STEP ND--UR/007C/70/015/002/0268/0274

CIRC ACCESSION NO--AP0116420

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--16OCT79

CIRC ACCESSION NO--APO116420

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE WAS DETERMINED FOR A SINGLE CRYSTAL OF THE X PHASE OBTAINED FROM AN ALLOY WITH MN 42.8 AND SI 14.3 AT. PERCENT OBTAINED IN AN ARC FURNACE AND TEMPERED AT 800DEGREES FOR 480 HR. THE CRYSTAL HAS THE FOLLOWING PARAMETERS: A 12.47, B 15.50, AND C 4.76 ANGSTROM; Z EQUALS 74, AND THE SPACE GROUP IS PNNM. THE AT. PARAMETERS WERE REFINED BY 2 DIMENSIONAL FOURIER SYNTHESIS; R EQUALS 15.5 PERCENT FOR 135 OBSO. HKO REFLECTIONS. THE COMPN. IS GIVEN BY R SUB14 X SUB23 IN WHICH R ARE ATOMS WITH COORDINATION NOS. OF 16, 15, AND 14 (MN) AND X ARE ATOMS WITH A COORDINATION NO. OF 12 (MAINLY CO AND SI). THE STRUCTURE CONSISTS OF FRAGMENTS OF STRUCTURES OF THE ZR SUB4 AL SUB3 AND MGZN SUB2 TYPE AND IT IS A MEMBER OF THE HOMOLOGOUS SERIES ZR SUB4 AL SUB3-MGZN SUB2. FACILITY: L'VOV. GOS. UNIV., LVOV, USSR.

UNCLASSIFIED

USSR:

UDC 620.17

TKACHEV, V. I., ROMANIV, A. N., KRIPYAKEVICH, R. I., LIVVIN, A. K., Physico-Mechanical Institute of the Ukrainian SSR Academy of Sciences, Lvov

"Device for Low-Cycle Fatigue Testing of Metals in an Atmosphere of Hydrogen and other Gases at Augmented Temperatures"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 2, 1972, pp 91-93

Abstract: The VTP-1 device is introduced which was designed and manufactured for low-cycle fatigue testing of flat specimens by pure bending at temperatures to 700° C in an atmosphere of hydrogen and other gases and also in a vacuum. The device was built on the basis of the LP-2 [V. I. Tkachev, et al., Fizmech, No 2, 1966] designed for low-cycle testing of metals in liquid media at room temperature. The basic assemblies include the following: a working chamber, a hydraulic drive for the loading system, a vacuum section with a forepump and diffusion pump, furnace transformers for heating the sample, a module for controlling the drive and vacuum section, a furnace temperature-regulating module, and a tank with the gases used to create the required atmosphere in the working chamber. The operation of these various assemblies is described. The design of the drive permits creation of hard or soft loading. The device is automated so that when testing at high temperatures in a vacuum with rupture of the specimen the oil supply to the slide valve system is cut off, and the piston 1/2

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KACHEV, V. I., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 2, 1972, pp 91-93

stops in the position it was in at the time of rupture. The diffusion pump and furnace heating are shut off simultaneously. The device then automatically steps through a shutdown and safety program.

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1/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--INFLUENCE OF COATINGS ON THE LOW CYCLE FATIGUE OF STRUCTURAL STEEL
IN CORROSIVE MEDIA -U-
AUTHOR--(04)-TKACHEV, V.I., KUSLITSKY, A.B., KRIPYAKEVICH, R.I., MIKHEYEV,
A.A.
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SUBJECT AREAS--MATERIALS

TOPIC TAGS--FATIGUE STRENGTH, PROTECTIVE COATING, STRUCTURAL STEEL, SEA
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CONTROL MARKING--NO RESTRICTIONS

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PROCESSING DATE--27NOV70

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LOW CYCLE FATIGUE OF STRUCTURAL STEEL SAMPLES COATED WITH A VARIETY OF MATERIALS WAS STUDIED IN CORROUSIVE MEDIA (3PERCENT NACL SOLUTION OR SIMULATED SEA WATER). OF ALL THE ELECTRODEPOSITED COATINGS STUDIED, THE MAX. FATIGUE LIFE WAS ACHIEVED FOR PHOSPHATED SAMPLES AND THE MIN. FOR CD PLATED MATERIAL. THIS DIFFERENCE WAS ATTRIBUTED TO THE FACT THAT PHOSPHATE PENITRATED INTO THE METAL IN THE LATTER CASE DURING ELECTRODEPOSITION.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF THE TECHNOLOGY OF MANUFACTURING ALLOY STEELS ON THE LONG
CYCLE FATIGUE IN VARIOUS MEDIA -U-
AUTHOR-(05)-KUSLITSKY, A.B., KRIPTYAKEVICH, R.I., TKACHEV, V.I., KOKOTAYLO,
I.V., STAROVYOTOV, YU.A.
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SUBJECT AREAS--MATERIALS

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HEARTH FURNACE, ELECTROSLAG MELTING, INDUCTION FURNACE, CHROMIUM NICKEL
STEEL, FATIGUE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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STEP NO--UR/0369/TG/006/002/0096/0097

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PROCESSING DATE--04DEC70

CIRC ACCESSION NO--APO129197

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE TECHNOLOGY OF MELTING CR,NI STEELS (OPEN HEARTH, INDUCTION MELTING, VACUUM ARC, AND ELECTROSLAG) ON THE LOW CYCLE FATIGUE OF THE CORRESPONDING GRADES IN VARIOUS WORKING "EDIA (AIR, SALT SOLUTIONS, ETC.) HAS STUDIED. IN GENERAL, VACUUM ARC AND MORE PARTICULARLY ELECTROSLAG REMELTING GREATLY INCREASED THE FATIGUE LIFE OF THESE GRADES UNDER SERVICE CONDITIONS.

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UDC 681.3.06.51

KRISEVICH, V. S.

"Series Automatic Search During Computer Processing of Information"

Statistika Teksta. T. 2 [Statistics of Text, Vol. 2 -- Collection of Works]
Minsk, Belorus. University, 1970, pp 321-330 (Translated from Referativnyy
Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V644 by F. Sidorova).

Translation: The problem of automatic search for information in files of documents coded in computer memory is studied. The criterion for search is code coincidence of the search pattern of the document and the request. Several methods of information search are studied, which the author believes to be the most convenient when working with files of information written on magnetic tape, namely: the sequential selection method, the sliding beginning method and a modified sliding beginning method. The advantages and disadvantages of these methods are described. An algorithm is suggested for the modified sliding beginning method, written for the Minsk-22 computer. A flow chart of this method of search is presented.

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